THAT WHICH IS CLAIMED IS:

1. In a process for brominating a styrenic polymer in an organic solvent in the presence of an antimony trihalide catalyst such that a reaction mass containing brominated styrenic polymer in an organic phase is formed, the improvement which comprises mixing hydrochloric acid or hydrobromic acid, or both, with said reaction mass at least once to extract antimony catalyst residues from said reaction mass as an acidic aqueous phase.

2. The improvement as in Claim 1 wherein the acid mixed with said reaction mass is hydrochloric acid.

3. The improvement as in Claim 1 wherein the acid mixed with said reaction mass is in the range of about 10 to about 20% aqueous hydrochloric acid.

4. The improvement as in Claim 1 further comprising recovering at least some catalyst residues from the acidic aqueous phase.

5. The improvement as in Claim 1 further comprising making a separation between said aqueous phase and said organic phase, and then recovering at least some catalyst residues from the acidic aqueous phase.

6. The improvement as in Claim 4 wherein the acid mixed with said reaction mass is in the range of about 10 to about 20% aqueous hydrochloric acid.

7. The improvement as in Claim 5 wherein the acid mixed with said reaction mass is in the range of about 10 to about 20% aqueous hydrochloric acid.

8. In a process for brominating a styrenic polymer in an organic solvent in the presence of an antimony trihalide catalyst such that a reaction mass containing brominated styrenic polymer in an organic phase is formed, the improvement which comprises extracting at least a portion of said organic phase at least twice with dilute aqueous hydrochloric acid to form an acidic aqueous phase containing extracted antimony catalyst residues from said reaction mass, and recovering at least some catalyst residues from at least a portion of said acidic aqueous phase.

9. The improvement as in Claim 8 wherein antimony trihalide initially present in said solvent prior to initiation of the bromination is antimony trichloride.

10. The improvement as in Claim 8 wherein the bromination is effected by charging elemental bromine or bromine chloride, or a mixture thereof into a mixture comprised of said organic solvent, styrenic polymer, and antimony trihalide catalyst.

11. The improvement as in Claim 10 wherein prior to initiation of the bromination, the antimony trihalide initially present in said mixture is antimony trichloride.

12. The improvement as in any of Claims 8-11 wherein said organic solvent consists essentially of 1,2-dichloroethane.

13. The improvement as in any of Claims 8-11 further comprising recovering at least some brominated styrenic polymer from said organic phase, and water washing and drying at least some of the recovered brominated styrenic polymer.

14. The improvement as in Claim 13 wherein said organic solvent consists essentially of 1,2-dichloroethane.

15. A process for preparing a brominated styrenic polymer, which process comprises:

a) charging elemental bromine or bromine chloride, or a mixture thereof into a mixture comprised of at least one organic solvent, styrenic polymer, and antimony trihalide catalyst such that brominated styrenic polymer is formed and is present in the resultant reaction mass which is further comprised of organic solvent and antimony trihalide catalyst residues;

b) mixing dilute aqueous hydrochloric acid or hydrobromic acid, or both, with said reaction mass at least once to extract antimony trihalide catalyst residues from said reaction mass as an acidic aqueous phase;

c) recovering at least some antimony trihalide catalyst residues from at least a portion of the acidic aqueous phase; and

d) recovering at least some brominated styrenic polymer from at least a portion of the organic phase.

16. A process as in Claim 15 wherein said antimony trihalide catalyst residues are recovered from at least a portion of the acidic aqueous phase by replacing the acidic aqueous phase by substantially anhydrous organic solvent to thereby form a solution of antimony trihalide catalyst residues in said organic solvent.

17. A process as in Claim 16 wherein said substantially anhydrous organic solvent is 1,2-dichloroethane.

18. A process as in Claim 16 wherein said acidic aqueous phase is made more concentrated prior to replacing the acidic aqueous phase by the substantially anhydrous organic solvent.

19. A process as in Claim 15 wherein said antimony trihalide catalyst residues are recovered from at least a portion of the acidic aqueous phase by concentrating said aqueous phase to an aqueous solution containing at least about 65 wt% of antimony trihalide and extracting said aqueous solution with substantially anhydrous organic solvent to form a solution of antimony trihalide in said organic solvent.

20. A process as in Claim 19 wherein said substantially anhydrous organic solvent is 1,2-dichloroethane.

21. A process as in any of Claims 16-20 further comprising recycling recovered antimony trihalide catalyst residues to the mixture in a) so that said recycled antimony trihalide catalyst residues constitute at least a portion of the antimony trihalide catalyst in said mixture in a).